

Technical Training Competency 4.1

Competency 4.1 Technical Training personnel shall demonstrate a familiarity level of knowledge of project management practices sufficient to manage training-related programs and projects.

1. Supporting Knowledge and/or Skills

- a. Explain the purpose of project management and, describe the life cycle of a typical project.
- b. Describe typical documents and data sources utilized in project management.
- c. Identify and explain the major elements of a project, and discuss their relationship.
- d. Explain the purpose and use of a project management plan.
- e. Discuss the relationship between work breakdown structure (WBS) and cost and schedule.
- f. Describe the purpose of schedules, and discuss the use of milestones and activities.
- g. Describe the critical path method of scheduling.

2. Self-Study Activities (corresponding to the intent of the above competency)

Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	http://wastenot.inel.gov/cted/stdguido.html	DOE Standards, Guides, and Orders
U.S. House of Representatives	http://law.house.gov/cfr.htm	Searchable Code of Federal Regulations

Read pages 15 and I-1 of DOE O 4700.1, *Project Management System*.

Technical Training Competency 4.1

Read the *Summary* section of this study guide.

EXERCISE 4.1-A Define project management.

Read pages II-63 through II-75, DOE O 4700.1, *Project Management System*.

Read Attachment II, pages 1 through 10, DOE N 4700.5, *Project Control System Guidelines*.

EXERCISE 4.1-B List the three major categories in the Project Control System.

EXERCISE 4.1-C Discuss the relationship of the three major categories in the Project Control System.

EXERCISE 4.1-D List the major elements of the Project Control System.

EXERCISE 4.1-E Describe a project management plan.

Read pages 10 and II-12 through II-14 of DOE O 4700.1, *Project Management System*.

EXERCISE 4.1-F Describe the relationship between the WBS, cost, and schedule.

EXERCISE 4.1-G List the three objectives of project planning and scheduling.

EXERCISE 4.1-H Define "milestone" as used in project management.

EXERCISE 4.1-I Describe the critical path method of scheduling.

3. Summary

Project management is a management approach in which authority and responsibility for execution are vested in a single individual, to provide focus on the planning, organization, direction, and control of all activities within the project.

The three major categories in the Project Control System are Baseline Development, Project Performance, and Change Management. The Baseline Development category includes management actions necessary to define the project scope and responsibilities, establish baselines, and plan the project. The Project Performance category includes management actions after work commences that are necessary to monitor project status, report and analyze performance, and manage risk. The Change Management category includes management actions necessary to ensure adequate control of project baselines, including the performance measurement baseline.

Technical Training Competency 4.1

The major elements of the Project Control System are shown below:

- Baseline Development
 - Technical Baseline and Work Scope Definition
 - Roles and Responsibilities
 - Cost Estimating
 - Planning and Scheduling
 - Cost Baseline
- Project Performance
 - Funds Management
 - Accounting
 - Work Authorization
 - Performance Analysis
 - Reporting
- Change Management

The project management plan is the document that sets forth the plans, organization, and systems which those responsible for managing the project shall utilize.

A WBS shows the relationship of all elements supporting the project and provides a sound basis for technical cost and schedule control. Each level of the structure is closely related to a management sphere within the project, providing the framework for relating time and cost summaries to appropriate levels of contractor and DOE managers.

The three objectives of project planning and scheduling are to ensure that all known requirements affecting a project are identified and considered in the development of project baselines; ensure visibility of critical path activities and DOE milestones; and ensure that all project work is scheduled using a disciplined approach, and properly integrated with other guideline elements.

A milestone, as used in project management, is defined as an important or critical event and/or activity that must occur in the project cycle in order to achieve the project objective(s).

The critical path method of scheduling is a method of graphically indicating the relationship of all project tasks to each other in terms of start dates, finish dates, prerequisites, and sequences.

Technical Training Competency 4.1

4. Exercise Solutions

EXERCISE 4.1-A Define project management.

ANSWER 4.1-A Project management is a management approach in which authority and responsibility for execution are vested in a single individual, to provide focus on the planning, organization, direction, and control of all activities within the project.

EXERCISE 4.1-B List the three major categories in the Project Control System.

ANSWER 4.1-B The three major categories are as follows:

- Baseline Development
- Project Performance
- Change Management

EXERCISE 4.1-C Discuss the relationship of the three major categories in the Project Control System.

ANSWER 4.1-C The Baseline Development category includes management actions necessary to define the project scope and responsibilities, establish baselines, and plan the project. The Project Performance category includes management actions after work commences that are necessary to monitor project status, report and analyze performance, and manage risk. The Change Management category includes management actions necessary to ensure adequate control of project baselines, including the performance measurement baseline.

EXERCISE 4.1-D List the major elements of the Project Control System.

ANSWER 4.1-D Baseline Development

- Technical Baseline and Work Scope Definition
- Roles and Responsibilities
- Cost Estimating
- Planning and Scheduling
- Cost Baseline

Technical Training Competency 4.1

Project Performance

- Funds Management
- Accounting
- Work Authorization
- Performance Analysis
- Reporting

Change Management

EXERCISE 4.1-E Describe a project management plan.

ANSWER 4.1-E The project management plan is the document that sets forth the plans, organization, and systems which those responsible for managing the project shall utilize.

EXERCISE 4.1-F Describe the relationship between the WBS and cost and schedule.

ANSWER 4.1-F A WBS shows the relationship of all elements supporting the project and provides a sound basis for technical cost and schedule control. Each level of the structure is closely related to a management sphere within the project, providing the framework for relating time and cost summaries to appropriate levels of contractor and DOE managers.

EXERCISE 4.1-G List the three objectives of project planning and scheduling.

ANSWER 4.1-G The three objectives are to ensure that all known requirements affecting a project are identified and considered in the development of project baselines; ensure visibility of critical path activities and DOE milestones; and ensure that all project work is scheduled using a disciplined approach, and properly integrated with other guideline elements.

EXERCISE 4.1-H Define "milestone" as used in project management.

ANSWER 4.1-H A milestone is an important or critical event and/or activity that must occur in the project cycle in order to achieve the project objective(s).

Technical Training Competency 4.1

EXERCISE 4.1-I Describe the critical path method of scheduling.

ANSWER 4.1-I The critical path method of scheduling is a method of graphically indicating the relationship of all project tasks to each other in terms of start dates, finish dates, prerequisites, and sequences.